TRAIL & Landscape

A PUBLICATION CONCERNED WITH
NATURAL HISTORY AND CONSERVATION

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T R A I L & L A N D S C A P E

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THE OTTAWA FIELD-NATURALISTS' CLUB

- Founded 1879 -

President: Mrs. Sheila Thomson, 2066 Rideau River Dr.
Secretary: Mr. A. W. Rathwell, Can. Wildlife Service

Objectives of the Club: To promote the appreciation, preservation and conservation of Canada's natural heritage; to encourage investigation and publish the results of research in all fields of natural history and to diffuse information on these fields as widely as possible; to support and co-operate with organizations engaged in preserving, maintaining or restoring quality environments for living things.

Club Publications: *THE CANADIAN-FIELD NATURALIST*, devoted to publishing research in natural history. *TRAIL & LANDSCAPE*, a non-technical publication of general interest to local naturalists.

Field Trips, Lectures and other natural history activities are arranged for local members. See inside back cover.

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FAMILY MEMBERSHIP: $7.00 per year; includes husband, wife, and dependent children. One copy of each publication will be sent to a household.

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Vol 6 No 2

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THE OTTAWA FIELD-NATURALISTS' CLUB
Box 3264 Postal Station C,
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(Editorial Address: see opposite)

BETTER MILEAGE FROM YOUR MEMBERSHIP

An organization is as dynamic or as passive as the human beings who comprise it. It is also true that your rewards from the pursuit of natural history will be directly proportional to your personal involvement in a natural history hobby or research project, or to the amount of leisure time you spend in the sheer enjoyment of wild things, whether bog orchids, bumblebees, or birdsong.

With these thoughts in mind, I would like to persuade each one of you to undertake some natural history activity that has appeal for you. Make it a family project to hear grouse drumming this April, or climb the Luskville escarpment in search of arbutus in May. Ask to be put in touch with other members who might like to form a study group on mushrooms (geology, spiders, reptiles ...). Offer to lead a field trip to explore a marsh or a mountaintop. Photograph the poisonous plants of our area, or record the activities of your cottage groundhog. If you toy with the thought of investigating the pollination of turtlehead, or the roosting habits of a flock of chickadees, plunge in. We might be able to find you a friendly biologist to point to available literature and to suggest techniques.

Have a fascinating time, and don't worry about the odd 'bug' that might bite you! At the end of it all, sit down and share your natural history observations with us in an article for Trail & Landscape or a paper for The Canadian Field-Naturalist.

Sheila Thomson

F.O.N. Newspage

James L. Baillie Ornithological Library

Jim Baillie's library, formed over a period of some fifty years and containing pamphlets, offprints, complete and near-complete runs of all major and minor periodicals, his personal field journals from 1921, his diaries, papers and correspondence, and two important unfinished manuscripts, was one of the finest reference collections on birds in private hands. It has been purchased by the University of Toronto Libraries and will be housed intact as a special collection in the Rare Books room. Mrs. Baillie feels that this collection constitutes a large part of Jim's material legacy to nature study in Canada and expresses the hope that ornithologists and interested birdwatchers will use it for their personal profit and the benefit of future generations of naturalists in Canada.

FON Annual Meeting

The 1972 meeting will be held April 28 - 30 at the Canterbury Inn, Sarnia. This is an opportunity to participate in an excellent program of speakers, displays and field trips, and to see friends you made at the meeting in Ottawa last year.

Natural History Site on St. Joseph's Island

The FON has accepted from the Sault Ste. Marie Club one hundred acres of property on St. Joseph's Island at a cost of $1. Under the present arrangement, the Sault Ste. Marie Club will pay taxes and maintain the property for as long as they are willing and able.

FRESHWATER OSTRACODES (CRUSTACEA) FROM NEAR OTTAWA

L. D. Delorme
Canada Department of the Environment
Inland Waters Branch
Calgary 44

Ostracodes are bivalved crustaceans sometimes called "seed shrimps" because of the similarity of their appearance to that of a white bean. The animal is housed within two half shells made up of calcite and hinged on the dorsum by ligament-type muscle. The length of the shells varies from 0.5 to 7 mm, and is commonly about 1 mm. The animal has nine paired appendages. The first antennae are long and slender, being made up of plumose setae. The second antennae are normally used for walking on the substrate and plants; however, they can also be used for swimming if the plumose setae are well developed on the penultimate segment of the endopod. The mandibles and maxillae are used for feeding purposes only. The first thoracic legs are whip-shaped in the females, and in the males are subchelate grasping appendages used for clasping onto the female during copulation. The second thoracic leg has a true apical claw and is used in conjunction with the claws of the second antennae for walking, climbing and burrowing. The third thoracic leg or "cleaning foot" is used to keep the interior of the shell clear of foreign particles; it is usually held in a reflexed position over the back and moves similarly to knitting needles. The furcae, which are slender elongate, rigid chitinous rods with moveable terminal claws, are not true appendages but are more properly telson-like appendages used for propelling the animal forward in a hopping motion much like a catapult. They have also been observed to remove feces from within the shell.

Reproduction is by both parthenogenetic and syngamic means, although some syngamic forms may reproduce parthenogenetically if the females are separated from the males, which has led many workers to come to the conclusion that the sperm is of no value in some freshwater ostracodes. As a point of interest, the length of the sperm in relation to the length of the animal is largest of any in the animal kingdom.

The ostracode egg can withstand both desiccation and freezing and still be viable. Some forms, notably those which live in temporary ponds, have an additional resistive stage called a torpid state (Delorme et al., 1969), which is a form of hibernation under moist conditions in the soil after the water has evaporated from the pond.

Prior to 1926, Mr. Frits Johansen collected ostracodes from in and around the Ottawa area and later submitted these to Professor G. O. Sars of Oslo, Norway for identification. Professor Sars included these specimens as part of the arctic fauna of Canada (Sars, 1926). This is the only reference known up to the present time for ostracodes from Ottawa. From Lake Erie cores, fossil ostracodes have been described by Benson and MacDonald (1963). Nuttall and Fernando (1971) have recently given a revised list of ostracodes from Lake Nipigon.

The systematics and key for the freshwater ostracodes of Canada and particularly western and northern Canada have been described by Delorme (1967, 1970a,b,c,d, 1971).

The following list contains the names and geographic locations of ostracodes described by Sars. Also included are photographs of shells of these species.

Cypris occidentalis Sars, 1926
From pools at Billings bridge, Ottawa

Cypris pubera Muller, 1776
From pools at Billings bridge, Ottawa

Eucypris crassa (Muller), 1776
From pools at Billings bridge, Ottawa

Cypricercus horridus Sars, 1926
From Rideau canal, Ottawa; pools at Billings bridge, Ottawa

Heterocypris incongruens (Ramdohr), 1808 now known as Cyprinotus incongruens (Ramdohr), 1808. From shallow pond at Chelsea road, Quebec, near Ottawa

Cypridopsis aculeata (Costa), 1847
From a pool near Ottawa

Pionocypris vidua (Muller), 1776 now known as Cypridopsis vidua (Muller), 1776. From the Rideau canal, Ottawa

Pionocypris helvetica Kaufmann, 1893 now known as Cypridopsis helvetica Kaufmann, 1893. From a pool on a beaver meadow, Quebec, near Ottawa

Candona parvula Sars, 1926
From a pool on a beaver meadow, Quebec, near Ottawa

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Benson, R.H., and MacDonald, H.C., 1963, Post-glacial (Holocene) ostracodes from Lake Erie: Univ. Kansas Paleont. Contr. art. 4, p 1-26.

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Delorme, L.D., 1970d, Freshwater ostracodes of Canada, IV. Families Ilyocyprididae, Notodromadidae, Darwinulidae, Cytherideidae, and Entocytheridae: Can. J. Zool. 48:6, p 1251-1259.

Delorme, L.D., 1971, Freshwater ostracodes of Canada, V. Families Limnocytheridae, Loxoxonchidae: Can. J. Zool. 49:1, p 43-64.

Delorme, L.D., and Donald, D., 1969, Torpidity of freshwater ostracodes: Can. J. Zool. 47:5, p 997-999.

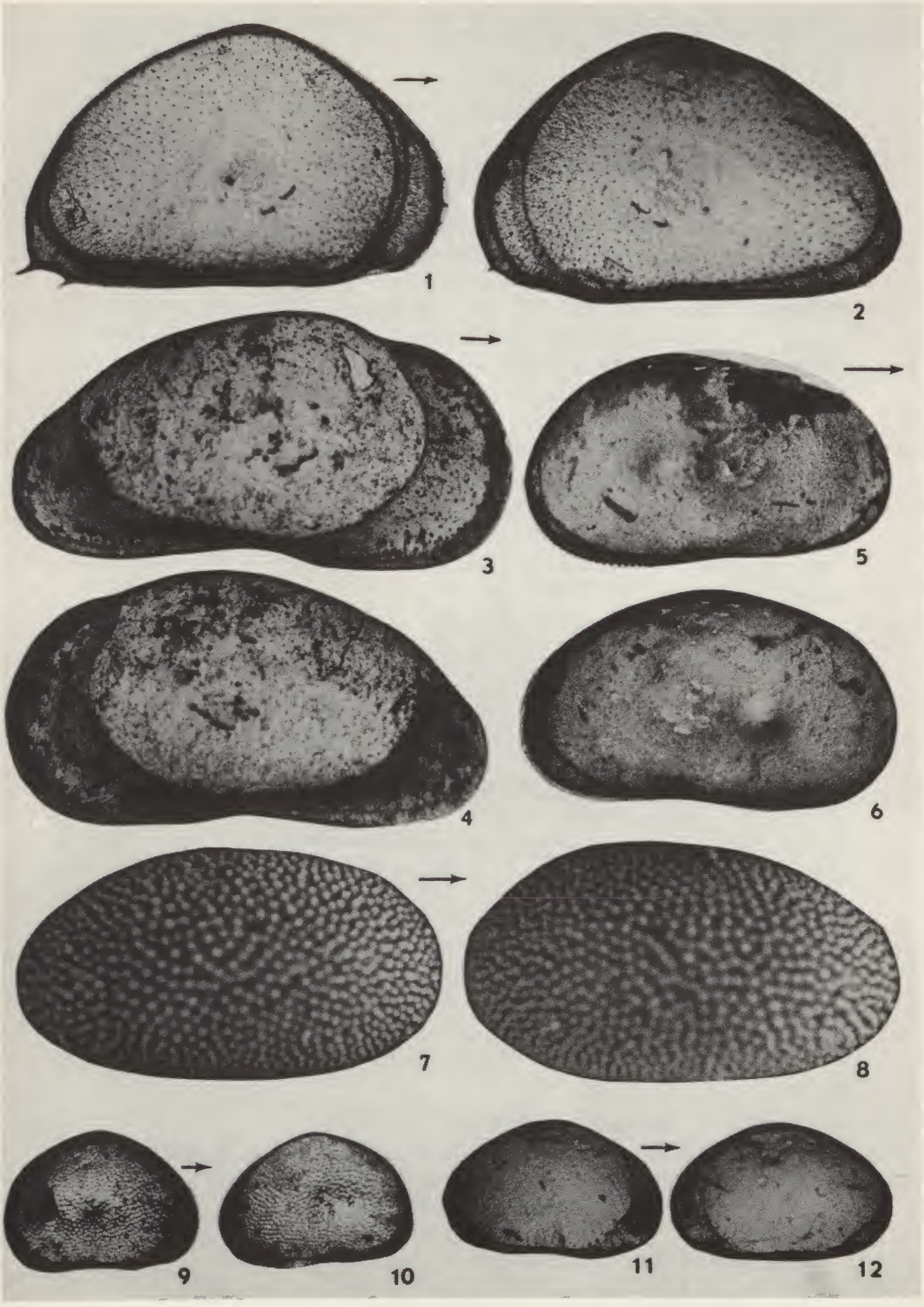
Nuttall, P.M., and Fernando, C.H., 1971, Freshwater Ostracoda (Crustacea) from Lake Nipigon, Ontario: Can. Field-Nat., 85:2, p 184-186.

Sars, G.O., 1926, Freshwater Ostracoda from Canada and Alaska: Rept. Can. Arctic Exped. (1913-1918), v. 7, pt. 1, 22 p.

FIGURES

Note: Arrow indicates anterior position, dorsum top of photo.

1 Cypris pubera right valve 17X
2 Cypris pubera left valve 17X
3 Eucypris crassa right valve 40X
4 Eucypris crassa left valve 40X
5 Cyprinotus incongruens right valve 40X
6 Cyprinotus incongruens left valve 40X
7 Cypricercus horridus right valve 40X
8 Cypricercus horridus left valve 40X
9 Cypridopsis aculeata right valve 40X
10 Cypridopsis aculeata left valve 40X
11 Cypridopsis vidua right valve 40X
12 Cypridopsis vidua left valve 40X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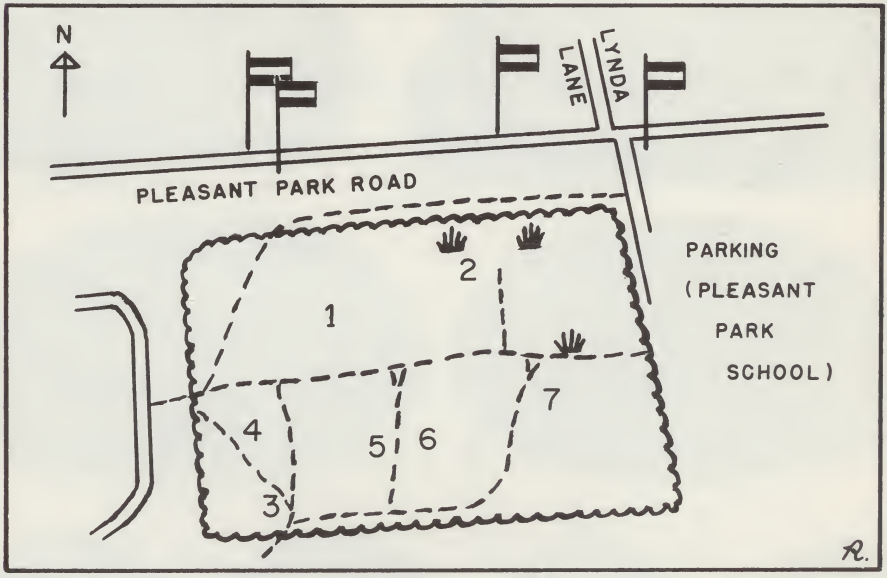
TAKE A BUS TO SPRINGTIME

Within the city limits you can still find remnants of woodland which are rich in spring flowers. Most of these are on N.C.C. land. One very accessible example is just west of Pleasant Park Public School in Alta Vista. Here a mature stand of maples, oaks, ashes, elms, beeches and basswoods shelters a floral carpet which you can admire and study from late April until June.

The following spring flowers have bloomed in the Pleasant Park woods for the past two years. They are arranged in order of their appearance with the advancing season. The numbers indicate the areas shown on the map where you are most likely to encounter the various species.



PLEASANT PARK WOODS

Bus stops, O.T.C. route 85

Spring-beauty	Claytonia caroliniana	4
Hepatica	Hepatica acutiloba	5,6
Fawn Lily	Erythronium americanum	5,6
White Trillium	Trillium grandiflorum	3-6
Red Trillium	Trillium erectum	3-6
Blue Cohosh	Caulophyllum thalictroides	5,6
Yellow Violet	Viola pubescens	3
Bellwort	Uvularia grandiflora	3
Wild Ginger	Asarum candense	5
Wild White Violet	Viola pallens	4,5
American Dog-violet*	Viola conspersa	4,5
Dwarf Genseng	Panax trifolius	5
Miterwort	Mitella diphylla	3
Sweet Violet	Viola odorata?	1
Canada Violet	Viola candensis	7
Twisted-stalk	Streptopus roseus	1
Solomon's-seal	Polygonatum pubescens	1
Foamflower	Tiarella cordifolia	3
False Solomon's-seal	Smilacina racemosa	3,5
Wild Lily-of-the-valley	Maianthemum candense	1-7
White Baneberry	Actaea pachypoda	3
Red Baneberry	Actaea rubra	3
Wild Strawberry	Fragaria sp.	5,6
Jack-in-the-pulpit	Arisaema atrorubens	5,6
Indian Cucumber-root	Medeola virginiana	2

*both blue and white forms

The leaves of Showy Orchis and Squirrel's Corn and/or Dutchman's Breeches come up, but no flowers have appeared lately.

Also worth mentioning are the luxuriant stands of poison ivy which grow in areas 1 and 7. Seldom in Ottawa does one get to see vines of poison ivy which have achieved the height of 7 feet! The N.C.C. underbrushed and spot-sprayed most of it last fall, but it should still be looked for and avoided.

Two other pieces of woodland along the same right-of-way have abundant displays of spring flowers too. One is northwest of the intersection of Smyth Road and Lynda Lane. The second, somewhat further away, lies west of McCarthy Road and just south of the railway tracks. If you want spring flowers close at hand, go to these woods this year - next spring could find a highway there instead.

Isabel Bayly

Marshes are wetlands which contain hydrophytic vegetation - aquatic plants, both emergent and floating. We can easily recognize a variety of marshes: freshwater, salt, open and closed. Freshwater marshes are the only sort in our area, since salt marshes are found only where water is saline, and this usually means a tidal marsh by the seashore. Open and closed marshes are degrees of freshwater marshes. A closed marsh is no longer supplied by a source of running water, although in past history it may once have been. It receives its water only from run-off from surrounding areas and from precipitation. Salt concentrations may fluctuate greatly in such marshes, and the plants which live there must be capable of tolerating such environmentally difficult problems. Open marshes are those where fresh water, usually from rivers, streams or lakes moves through them constantly, supplying fresh, if dilute supplies of nutrients, and a more even environmental climate, even if water currents may make plant colonization somewhat difficult. Marshes, you should note, are not swamps, and the distinction is very simple. Marshes have herbaceous plants as dominants, while swamps have woody plants such as cedar as dominants.

You can find marshes of all sizes to suit your taste. These occur wherever there is a low-lying area with a suitably impervious soil layer or bedrock beneath. Here water supplied by precipitation is slow to move away, and does not penetrate the lower soil layers. Marshes may be many thousands of acres, or they may be less than a few feet across, so long as marsh plants are present, and the moisture is there to nourish them. Where ditches have been dug along roadsides, and run-off from the road is occurring, even there you can see marsh rudiments in the cattails and sedges, and in the nests of redwinged blackbirds. You clearly don't require safari gear to go looking for a marsh. It's simply a matter of going for a little drive or hike in the neighbourhood.

Heavy floating mat islands at Taylor Lake.

Light filters dimly to the floor of the marsh. In August, as the water table lowers, the marsh is invaded by many seedlings of annuals from neighbouring fields.

In winter, the muskrat lodges show clearly as snow-topped hummocks.

In summer, the muskrat lodges are well-concealed by the surrounding growth of cattails.

Starting with tiny marshes, observation will prove to you that even the smallest have a lot to offer. They are places of quiet and peace where life goes on in the ordered and time-honoured tradition of succession and competition typical of all parts of the ordered biotic world. In summer you observe that the vegetation is thick and vigorous, displaying a huge range of greens, far more than any colour-matching book will ever offer. But should you arrive at the edge of a marsh in early spring, just as the ice is melting, or in the winter, all the vegetation will be pale yellow and dried out, so that you can scarcely believe that anything will ever grow or live in this place. If you return a few weeks later you will see pale green shoots springing up everywhere, growing inches per day, and in a very few weeks the marsh will be fully grown and in its summer dress. Locally this dress takes the form of dense cattails (Typha) or giant reeds (Phragmites), with dozens of smaller marsh plants growing in the shelter of the taller ones. Locally these may be the marsh calla (Calla palustris), the marsh marigold (Caltha palustris), arrowhead (Sagittaria latifolia), woolgrass (Scirpus eriophorum), jewelweed (Impatiens biflora), beggar's tick (Bidens cernua), bedstraw (Galium palustre) or a host of others, about 150 in all. If you journey as far as the large marsh at Point Pelee, you can see the rare (for Canada) marsh hibiscus (Hibiscus palustris) with its huge pink blossoms.

Floating aquatics of freshwater marshes are also diverse and interesting. There are the white and yellow waterlilies (Nymphaea odorata and Nuphar sp.), the tiny duckweeds (Lemna minor and Lemna trisulca), and if you are really in luck you may find Wolffia, the tiniest flowering plant of them all, just a few organized green cells floating like green cornmeal on the water surface. On the Rideau you can see a plant whose leaves resemble a small waterlily. This is frogsbit (Hydrocharis morsus-ranae), a relatively recent introduction from Europe, which is making very rapid growth up the Ottawa and Rideau waterways. There are three very common floating aquatics: Utricularia, with finely dissected sets of leaves beset with tiny bladder traps which ingest aquatic insects; Myriophyllum (coontail) with finely whorled leaves, bushy like a green raccoon tail; and Elodea, with thin translucent dark green leaves. Vegetative

Arrowhead sometimes grows in huge colonies in marshes, but usually it is only subordinate to other members of the marsh community.

Light strikes the bases of the cattails in the open marsh. Tiny dots on the water surface are the nitrogen-fixing blue-green alga, Nostoc caeruleum.

reproduction is the big thing with aquatics, and plants can overwinter by producing a tight fat round bud, which contains all of the next year's growth. These buds are formed at the end of each growing season, sinking to the bottom of the marsh for the winter, to rise again the next spring as the water again warms. These specialized buds, the hibernacula, are common in all floating aquatics, and should be looked for in marsh and river water in the fall of the year.

What are you likely to see in the way of animal life? First, start looking in the waters. There, depending on the depth, duration of the water and the season, you should see a variety of frogs. Look and listen for that resonant "rrumm, rrumm" sound of the adult bullfrogs, or make an attempt to corral some of the really fat tadpoles. Some marshes have fish in them, not usually game fish, but species which can survive under the stress of low oxygen content in the water - fish like catfish or sunfish. In closed marshes little oxygen is present, but in open marshes, provided the water is moving at a reasonable rate, all of the freshwater fish of open waters will be present. In waters so shallow that their backs are exposed to the sun, carp thrash about at spawning time, or other times. To find snakes you must be very cautious and quiet, and proceed along a sunlit marsh margin or paddle quietly in your canoe, since undue noise will send them off at high speed. The two commonest, the water snake and the fox snake (a little farther west) are both quite harmless and very beautiful. The sight of them in their natural surroundings will repay your caution. There are several species of turtles (increasing in numbers as you go south and west) but the most common are the snapping and the painted turtles. If you pass close to a snapping turtle, you may be startled by a sudden loud hiss, reminiscent of an abruptly flattening tire.

The marsh birds can be very rewarding as well. If the marsh contains open bodies of water, you should especially try to be there during migration, to see the waterfowl as they pass through. Locally large numbers of nesting birds are uncommon, but you can certainly catch a glimpse of these noble animals as they come through on their north- and southward journeys. Many birds take advantage of floating mats of vegetation to build nests away from predators; these include the

bittern (whose call surprises you into thinking that someone is blowing across the mouth of an earthenware jug) and many ducks, including pintail, mallard, blue-winged teal and canvasback. In some areas, huge colonies of terns wheel about as you approach, making agitated passes at your head. They are only protecting their territories of course, on which you are an alien being. In southern areas of Ontario (Point Pelee) flocks of egrets can be seen striding along in the shallows, and from the trees overhanging the marsh the black-crowned night herons fly out as the canoe passes.

Mammals which come to the marsh to live are really very few, locally. Deer and even domestic cattle can be found munching on the marginal marsh vegetation, or drinking the water. Moose should be there, but locally they are so few that you would indeed have a reward if you were to see one. So - content yourself with a very industrious little animal, the muskrat. A prime fur-bearer, and sought for his pelt, his home is exclusively in marshes and marsh meadows. He builds his home wherever plant material is available, and can clear large tracts of marsh in years of high population, in search of housing material and food, which are conveniently the same abundant plant, the cattail. You may have difficulty seeing even the muskrat lodges, which are often concealed by the cattails, but if you look at a marsh in its winter aspect, the lodges stand out quite clearly as hummocks on an otherwise rather flat landscape. Having marked their presence, you are in a position to watch, again very quietly, their activities in the summer months. Muskrats do not seem to tolerate a great deal of disturbance, so that to see them going about their work you should again proceed into the marsh with caution.

Observation of marshes can be done in several ways. The easiest (for armchair naturalists) is to drive to a marsh which lies close to a road, remain in the car and watch to your heart's content. The stationary car may initially cause a flurry of excitement, perhaps among the redwinged blackbirds, but after a short time things settle down and the animals go about their work as though the car did not exist, much as they do when a blind has been placed there - another way of watching fauna without disturbing them. If the marsh has open bodies of water, or even ditches running through it, you can slip a canoe

into the shallow water and silently make your way into the deeper parts, making no sound, disturbing nothing. Real observational rewards come on such expeditions.

You can get a lot of enjoyment out of marshes. They can be quite close to habitations but life there goes on in them as though man were thousands of miles away. Unfortunately few people realize how really important a marsh can be in terms of food and habitat for wildlife or as a reservoir for water, so that only too often marshes, small and large, fall prey to housing developments, landfill programs and drainage.

I cannot end without mentioning a few 'favourite' marshes, near and far. First, Ramsayville Marsh, for its accessibility, its relatively abundant fauna, and easy opportunities for observation, even for armchair naturalists. Then there is the tiny transitional marsh at Taylor Lake in Gatineau Park, consisting of floating mats in the centre of the lake, mats so thick that they can support a good-sized person. On the Gatineau River, a small remnant marsh flora is present all along, and where there are back bays into which the canoe can go, there are rewards aplenty waiting. The same holds true all along the Ottawa, although I am particularly fond of the pocket-sized marsh on the lazy creek north of Norway Bay, where the Sagittaria is thick, lush and glossy green; and right around the corner from that one is another inlet, full of Wolffia in mid-summer. On the Tay River, above Perth, a large marsh of floating mats of cattail can be found, supporting reasonable summer duck populations. Then there is a small marsh near Bell's Corners, on the Richmond Road, where 'armchair viewing' is also possible. Don't ignore the fine marsh meadows of Lac Bourgeois or Fortune Lake either. And lastly, if you are 'on safari' this summer and stray as far southwest as Point Pelee, you can get a canoe there and paddle through the huge marsh, or wander down the boardwalk which is constructed out into the marsh, and from a dry vantage point, watch the muskrats at work among the cattails.

Those are some of my favourites. But don't take my word for it. Discover your own marsh. There's one close to you, and it will likely become your favourite marsh after the first visit!

The Champlain Sea

AND DISCOVERY NEAR OTTAWA OF THE ONLY KNOWN RECORD OF

Marine Algae
(SEAWEED)

George A. Neville, Ottawa, Ontario

There is an interesting morainic ridge of sand and gravel in Nepean Township over which Moodie Drive passes about two miles south of the Jack Pine Forest. This formation, which extends in a southeasterly direction for about 12 miles from the sharp bend in the Jock River (2 miles north of Twin Elm), varies in width from 200 feet to a mile. It is one of several similar ridges occurring in the Ottawa area which mark minor halts in the general retreat of the last (Wisconsin) glaciation. The western flank is characterized by massive deposits of reworked (i.e. by wave action) sand, underlaid at depths of 20 to 50 feet by gently inclined beds of marine sand, silt and clay. The eastern flank is more rugged in character, being composed of glacio-fluvial sand, gravel, boulders (up to 2 ft. in diameter)(fig. 1), and pockets of glacial till. The ridge has been and continues to be extensively quarried for its high quality sand particularly on the west side of Moodie Drive where the Burnside and Unsworth pits are located. As a result of earlier excavation on the east side of Moodie drive, one can easily survey the exposed glacio-fluvial boulders from the road. It is the Unsworth pit (Conc. V, lot 10) at the corner of Moodie Drive and the road to Twin Elm which holds the only known record of marine algae found anywhere from the Champlain Sea episode. Across the road and to the southeast, an earlier sand pit has been used by Nepean Township as a dump, but its capacity is quickly terminating following the introduction of landfill operations a year or so ago. The scarred remains from disposal operations cast an ominous shadow on the algae pit and portend a similar fate for this so-far unique repository of Champlain Sea episode history.

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Geological Survey
of Canada

The Unsworth pit is easily descended from Moodie Drive, and the first thing that strikes even the most casual observer is the remarkable abundance of marine fossils of molluscs, which include Balanus sp., Hiatella arctica (Linné) and Macoma balthica (Linné). Originally two major strata of sand deposits were present in the pit, evidence for which can still be seen in spite of extensive excavation. The upper deposit of sand is steeply bedded (fig. 2) and oxidized to a buff colour. Leaching of carbonate minerals is complete in the top few feet of the sand, but it is incomplete beneath. The partly leached shells in the upper portion (fig. 3) have a chalky appearance. The gently dipping lower sand is below groundwater level and is gray, unoxidized and unleached. Shells of Macoma balthica (Linné) with the periostrecum preserved occur in abundance in a layer a few feet below the contact between the two sand formations.

It is to the credit of the pit owner, Mr. Orr Unsworth, that his curiosity for what appeared to be buried rotten wood stimulated extensive investigation of the site by R. J. Mott (member of the Ottawa Field-Naturalists' Club) of the Geological Survey of Canada, Ottawa, in 1965 and led to the identification of the material as extensively well preserved marine algae (seaweed). The algal material was found in layers within the sand $\frac{1}{2}$ to $1\frac{1}{2}$ feet above layers of shells. The original exposure contained two thin ($< \frac{1}{2}$ inch) algal layers (fig. 4); a second exposure about 100 ft. to the north showed two layers, one about 3 inches thick and a second about 2 inches thick (fig. 5); a third exposure, close to the second and uncovered at a later date showed several thin ($< \frac{1}{2}$ inch) algal layers above a shell layer (fig. 6). Radiocarbon dating of shells from the lower sand, algal material, and shells from the upper sand gave dates of 10,800 ± 160 years; 10,800 ± 150 years and 10,620 ± 200 years respectively, which compare very favourably with previous dates for other shells and bones obtained from Champlain Sea fossil materials in the upper St. Lawrence and Ottawa Valleys.

The remarkable state of preservation of the algae and the underlying shells is undoubtedly due to (a) rapid burial beneath a considerable thickness of sand

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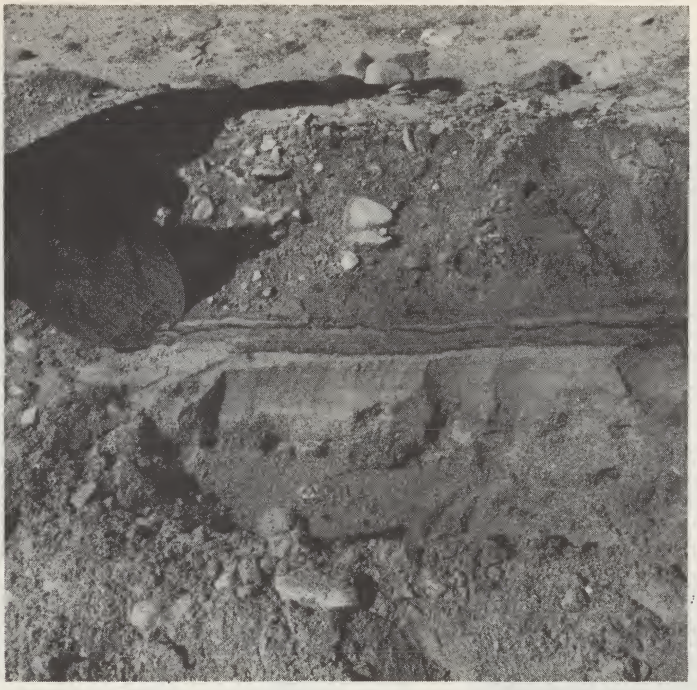

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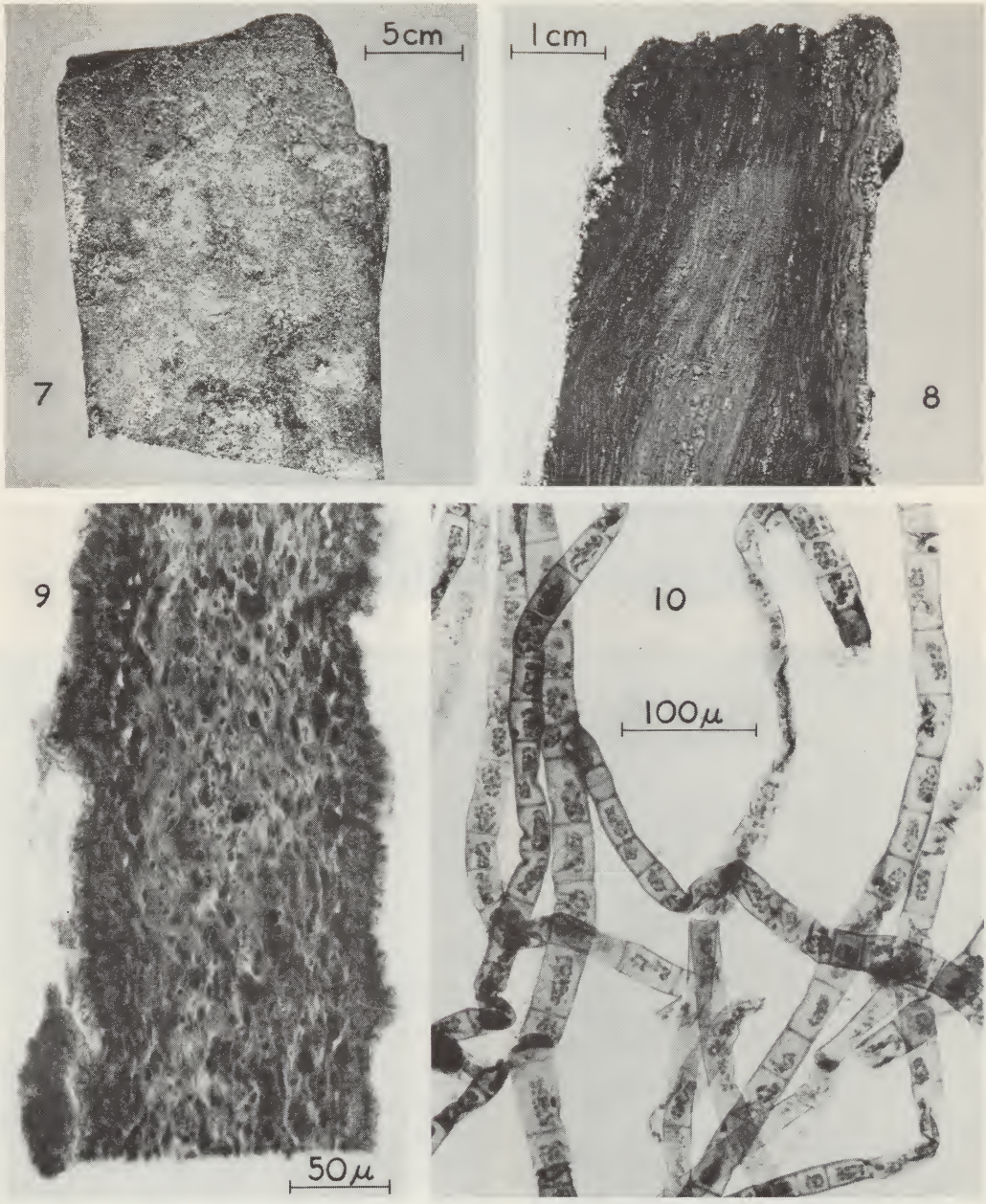
Geological Survey of Canada

Figs 1-6 Reproduced by permission of the National Research Council of Canada from the Canadian Journal of Earth Sciences, 5, pp 319-324 (1968).



FIGS. 7: a block of bulk algal material; 8: a section in the block showing laminated construction and lighter pigment in the centre; 9: a cross section in a Laminaria blade; 10: a filamentous brown alga, Ectocarpus or Pylaiella.

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deposited in the sea, and (b) a groundwater level that has not dropped below the level of the algal layer since burial. At least 20 feet of sand covered the algal layer before excavation of the pit began, and this sand must have been deposited rapidly in marine waters because of the small difference between radiocarbon dates and from the articulation of the shells. Burial occurred before sea level dropped enough to expose the seaweed.

As Mott (1968) has noted, burial itself is not enough to account for the preservation. When exposed to air and drying, the algal material deteriorates rapidly to a soft, flaky, easily crumbled layer. Similarly the periostrecum of the shells dries and flakes from the surface. The lack of this type of deterioration suggests that the groundwater level has not fallen below the level of the algal layer. Other evidence of a high groundwater level is found in the unoxidized condition of the lower sand and in the seepages that occur on the flanks of the ridge. At present, a ditch has been dug to permit drainage to the southeast towards the Jock River to prevent flooding. In the past when forests covered the ridge, the groundwater level was probably much higher than when the algal material was first seen, and water loss was controlled more effectively.

W.I. Illman (member of the Ottawa Field-Naturalists' Club and Professor of Botany at Carleton University) and his associates J. McLachlan and T. Edelstein carried out taxonomic examination of the algal material. The bulk of the material (fig. 7) was dark brownish-gray in colour and spongy in texture. In fresh transverse section, distinct lamellae with embedded, granular mineral particles were apparent, and the centre of the block was light to medium olive-brown (fig. 8). The lamellae consisted of compressed layers of blades of the brown (Phaeophyceae) alga Laminaria. These could be separated into dark, fragile fragments up to several centimetres square. The general morphological features of Laminaria in section may be seen in fig. 9. Between the fragments of Laminaria, and often attached to them, one frequently encounters branched, filamentous brown algae which resemble Ectocarpus or Pylaiella (fig. 10). A single fragment of

what appeared to be a foliose red (Rhodophyceae) alga was also found in the sample. The 1 to 2 layers of small cortical cells and the large irregular cells of the medullary filaments suggested the genus Rhodymenia which is frequently associated with Laminaria.

Various pigments were extracted from the sample, separated by thin layer chromatography and identified on the basis of absorption spectroscopy as carotene, phaeophytin[a], chlorophyll[a], diatoxanthin, fucoxanthin and lutein. In addition, several other unidentified pigments were observed to be present in small quantities. These observations corroborate Mott's suggestion (1968) that the deposit resulted from sudden burial rather than prolonged deposition. Faunal remains in this deposit (Mott, 1968) and those from a site near Montreal (Elson and Elson, 1959) point to a subarctic marine environment. The composition of the flora also suggests a subarctic or cold-water environment similar to present-day conditions along the eastern coast of Canada.

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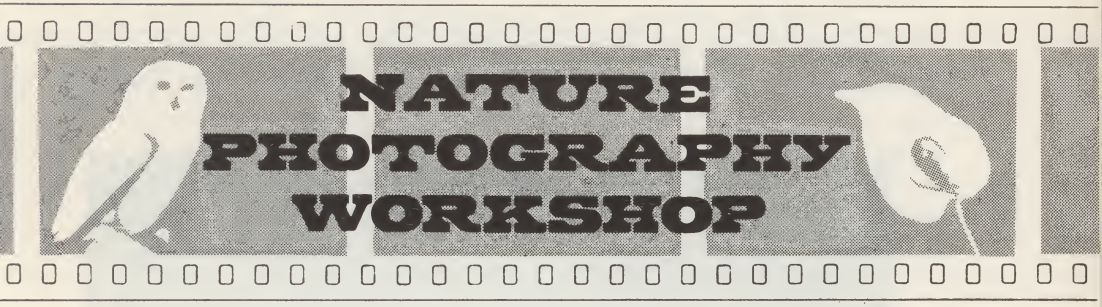


CLOSE-UP FLOWER PORTRAITS

Part of the flavor and character of a flower is derived from where it grows, what it grows with, and what the whole plant looks like. We can usually record these details with any camera and lens. But when we want to fill the camera frame with a very small plant or with a single blossom, we find that we can not focus the camera close enough without the help of additional equipment.

The handiest and least expensive solution to the problem is to place one or more close-up lenses in front of your normal camera lens. In fact this is the only solution available to those who own a camera with a non-interchangeable lens. Close-up lenses shorten the focal length of your lens, allowing you to move nearer to the flower, thereby enlarging its image. They have the advantage of not changing the exposure required for the picture. You can use close-up lenses to achieve moderate magnification, but there is a limit beyond which image sharpness at the edges drops drastically.

It is essential to know the exact framing of small subjects, and to get precise focusing. The single-lens reflex camera is well suited to do both directly, whether close-up lenses are used or not. Focusing a rangefinder camera equipped with a close-up lens involves measuring the lens-to-subject distance, and then referring to a table to find the proper setting for the distance scale. The viewfinder of a rangefinder camera usually does not align the camera properly; to get an idea of framing you can rig up or acquire a wire frame to use as a guide.

A second method for increasing the image size is to increase the distance between the lens and the film by screwing in a bellows or some extension tubes between

PINK LADY'S SLIPPER, A SPRING ORCHID
Kodachrome II transparency by Joyce Reddoch, converted to a print by John Kempt

the lens and the camera. You will find both these accessories very versatile, especially when you have a single-lens reflex camera. Extension tubes come in sets of three or four and can be used singly or in combination. They are easier to use in the field than a bellows, but a bellows has the advantage of giving you a continuous range of magnification from moderate to extreme. And since you use only the regular camera lens, quality is maintained at all degrees of magnification. When you increase the distance of the lens from the film, you increase the exposure factor accordingly.

The accompanying photograph of the Pink Lady's Slipper was obtained with a single-lens reflex camera amid a cloud of mosquitoes. After looking the situation over and making sure there was no risk of trampling nearby plants, I chose the appropriate extension rings so that the flower filled the frame, and clamped the camera firmly to a tripod at the right distance from the flower. Generally flowers look best when photographed from their own level rather than from above, so the camera was clamped to the leg of the tripod to get it low enough. A tripod is indispensable because it holds the camera while you attend to other details. A more important consideration is that the closer the camera is to the subject (and the greater is the magnification), the shallower is the depth of field (the region in focus). This means that precise focusing is critical, and the only way it can be maintained long enough for you to release the shutter is to have the camera securely fixed.

Since I needed the greatest depth of field possible, I used the largest available f-stop (smallest aperture). Then I provided the required light with an electronic flash held a measured distance from the flower. (This distance, which changes with the extension, can be calculated or found in tables. Use a guide number for the film that is 40% of that recommended by the manufacturer.) At last, after waving away the mosquitoes for the last time, I released the shutter. That is how this photograph was made, but one must continue experimenting to see what advantages are to be gained using different lenses and lighting arrangements.

Joyce M. Reddoch

HACKBERRY ON KING MOUNTAIN !?

D. F. Brunton

"All...stands were near streams or rivers...less than two feet above the water table...almost invariably over limestone..." (Brunton 1971).

The above description of typical Ottawa District habitat for Hackberry (Celtis occidentalis L.) took quite a beating last fall, with the discovery of the species growing on a cliff in the Gatineau.

There are probably few better ways to show how incomplete our knowledge is than to publish a note describing a search as being more or less complete! Since last summer's article on Hackberry in the District (Brunton 1971) the situation has been altered dramatically; two new sites have been discovered and an old one has been lost, for a net gain of 11 trees (bringing the total to 288 plants).

The two new sites are:

(1) Nine small and gnarled trees, 450 feet up the 500-foot, southwest side of King Mountain, Hull Twp. Gatineau Co. The exact site is Latitude 45°25'7" N., Longitude 75°52'8" W. and it was discovered October 14, 1971 by J.D. Lafontaine and D.F. Brunton.

(2) Three small trees 50 feet north of the Voyageurs' Portage, east of Parc Brébeuf, Val Tetreau, Hull Twp., Gatineau Co. Its exact location is Latitude 45°25'7" N. Longitude 75°44'25" W, and it was found on October 14, 1971 by J.D. Lafontaine & D.F. Brunton.

In addition, Ont. side Station 11 has been destroyed; the University of Ottawa has a building on top of it. Ont. side Station 9, at Brewer's Park, has been damaged by piling of salt-impregnated snow throughout the winter of 1970-71, which appears to have been repeated this winter.

The Val Tetreau station at the Little Chaudière Rapids was not surprising -- indeed we went into the woods expecting to find it. However, the King Mountain station was anything but expected!

Fifty feet from the top of the 500-foot cliff, in an exposed, near-vertical section of broken rock, these 9 plants cling to the gneiss escarpment. This record (the first for Gatineau Park) would seem to contradict everything written about the species' habitat. Associated plants include Red Cedar (Juniperus virginiana) (a surprise, as it too is southern), Poison Ivy (Rhus radicans), Rusty Woodsia (Woodsia ilvensis), Slender Cliff Brake (Cryptogramma stelleri), Maidenhair-Spleenwort (Asplenium trichomanes), and Draba lanceolata (another rarity). Hardly a Carolinian flora!

How did Hackberry get there? It would seem likely that birds played a role in the establishment of this station. Such a site is inaccessible to most natural processes capable of transporting Celtis seeds.

With Hackberry on King Mountain, one recalls stories of it on Allumette Island, by Pembroke...and wonders. If it can survive the rigours of cliff life, why should it not be able to withstand the elements of the upper Ottawa? Who knows?

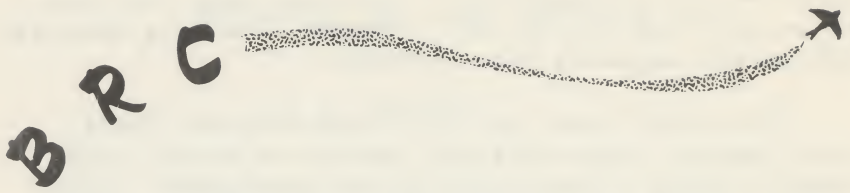
Literature Cited

Brunton, D.F. 1971. A Report on the Status of Hackberry in the Ottawa District. Trail & Lands. 5:3 p 68-75.

* * *

Records Wanted of the capture of LITTLE SULPHUR BUTTERFLY (Eurema Lisa) in Ontario. As I would like to document the occurrence of this species in Ontario, it would be appreciated if members would consult their records and collection -- and send the dates and locations to Paul Catling, 104 Victoria Park Ave., Toronto 13.

from TORONTO FIELD-NATURALISTS' CLUB Newsletter



The Bird Records Committee and YOUR Records

D. F. Brunton

A great many members of the OFNC are birders. In pursuit of their interest, thousands of hours (and dollars) are expended each year, and much enjoyment is derived. But, are we making full use of this considerable investment? Unfortunately ... no. Most of us keep mental notes only, thus reducing the long-term value of these records tremendously.

An example: In the late 1800's, Lt.Col. and G.R. White were 'the' birders in Ottawa. In 1883 when they reported a Swallow-tailed Kite, it went unquestioned. Today, there are those who do question it, as no details of the observation were preserved. What was an unimpeachable source 90 years ago, today seems only a name from a dusty journal. Who is to say these same doubts will not be raised over your observations in the year 2060?! Your observations are important, and deserve a better fate.

The solution is the Bird Records Committee (BRC, for short), which was formed last fall to replace the old Bird Census Committee. What will it do?

The BRC has three main functions:

1 to co-ordinate ornithological activity within the OFNC - e.g. census, publications, etc.

2 to determine the acceptability of rare bird reports for the permanent records of the OFNC

3 to provide a standard system for processing bird records and observations.

"Rare Bird Report Forms" are now available from all members of the BRC. These prescribe the essential data of any rare bird report, and will be the basis of submissions to the BRC (accompanied by any field notes, photographs, diagrams, etc.). At the next meeting of the committee, the report will be confidentially examined. It is vital for all to realize that the report, not the reporter, is being examined! It may be 100% correct, but if the submission as presented now is not convincing, it most certainly will not be so in 20 or 30 years, and so must be rejected.

To insure fairness, only BRC members will be present when a report is being discussed. All reports will be preserved. Accounts of accepted ones will be published in OFNC publications after the reporter has been notified. Anyone may ask for a re-examination of a record, whereupon professional opinion will be sought. You are welcome to attend BRC meetings (excepting those confidential periods outlined above).

The BRC has 10 annually elected members. For 1972 they are:

Chairman - Roger Foxall (745-7791)
Secretary - Dan Brunton (236-5845)
Monty Brigham (728-0855)
Tony Erskine (225-2341)
George Holland (822-6623)
Don Lafontaine (722-1692)
Hue MacKenzie (722-8847)
Bruce MacTavish (825-1502)
Ron Pittaway (684-5719)
John Woolley (836-5738)

If you have any questions about birding and/or birds, call any one of us. (Of course we'll listen to offers of help - e.g. we never have enough drivers for census and Runs).

Use the BRC! It's there to ensure the continuing value of your records. Ask for the "Rare Bird Report Forms". Take them into the field with you. Use them... and of course, submit them to the BRC.

Good Birding!

COMING EVENTS IN MARCH AND APRIL

Arranged by the Excursions and Lectures Committee
Ewen C. D. Todd (225-4316), Chairman

Members arriving by bus at meeting place for excursion can usually find rides with other members going by car. For further information you may phone leader or chairman.

Sunday 12 March

FIELD TRIP: WINTER BIRDS AND OWLS
Leader: Roger Foxall (745-7791)
Meet: Britannia Drive-In parking lot
Time: 8 a.m.
Half day trip; bring a snack

Wednesday 15 March

DISCUSSION: FOSSILS IN THE OTTAWA LIMESTONE
Leader: Janette Dean (224-9474)
Meet: Bell High School, Cedarview Road, Bell's Corners
Time: 8 p.m.
An introduction to the geology of the local area with emphasis on the fossil-bearing limestone rocks. A display of fossils will help to identify those to be found at the quarry (field trip April 22). Those wishing transportation to the school contact leader by 12 March.

Early April

FIELD TRIP: NIGHT OUTING
Leader: Roger Foxall (745-7791)
This excursion will be for nocturnal life in the woods, including owls and mammals. Those interested should call leader by 25 March.

Saturday 1 April

FIELD TRIP: BIRDING TO PRESQU'ILE PARK
Leader: Brian Morin
Meet: Gate at entrance to Park
Time: 8:30 a.m.
All day trip. Those wishing to stay overnight may make arrangements with The White House, Brighton (613-475-0004). All persons, whether intending to drive or requiring transportation, should call leader before Thurs. 30 March.

Saturday 8 April

FIELD TRIP: OWLS AND EARLY MIGRANTS
Leader: Bill Holland (234-6705)
Meet: Billings Bridge shopping centre
Time: 8:30 a.m.
Half day trip; bring a snack.

Thursday 13 April

ANNUAL DINNER
7 p.m., Bruce MacDonald Motel - see centre fold. Last date for reservations: 4 April.
Further information from Ewen Todd (225-4316).

Saturday 22 April

FIELD TRIP: OTTAWA LIMESTONE FOSSILS
Leader: Janette Dean (224-9474)
Meet: Main gate, Frazer Duntile Quarry, Woodward Ave.
Time: 9 a.m.
Half day trip. Bring hammer, hand lens and newspaper for wrapping fossils.

Monday 24 April

FIELD TRIP: AMPHIBIANS IN SPRING
Leader: Francis Cook
Meet: West parking lot, Beamish Building 510 Carling, just west of Kirkwood
Time: 7 p.m.
Flashlight or headlamp, net and rubber boots will be useful. Dress warmly.

Wednesday 26 April

DISCUSSION: BIRD ROUND-UP #4
THE MIRACLE OF MIGRATION
Leader: Roger Foxall (745-7791)
Meet: St. Andrew's Presbyterian Church, Kent & Wellington - Kent St. door
Time: 8 p.m.
General presentation of some of the intriguing facts we know about how birds migrate.

Sunday 30 April

FIELD TRIP: MARSH BIRDS AT RAMSAYVILLE
Leaders: Bruce MacTavish (825-1502) and Mike McKie (825-3255)
Meet: Anderson Road at CNR tracks north of Russell Road
Time: 7 a.m.
Early morning walk for migrant marsh and woodland birds.

TRAIL & LANDSCAPE

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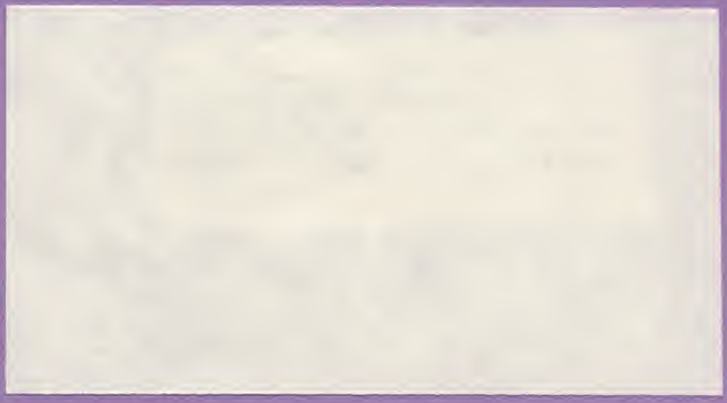

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